

PATENT
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:)
M. Seul)
Serial No. 10/645,426) Group Art Unit: 1641
Confirmation No. 8876) Examiner: Do, Pensee T.
Filed: 6/21/2003)
For: Arrays Formed of Encoded Beads Having)
Ligands Attached -

Commissioner for Patents
PO Box 1450
Alexandria VA 22313-1450

Preliminary Amendment

Dear Sir:

In connection with the RCE filed, please enter the following claim listing.

Respectfully Submitted,

By:/EPM/
Eric P. Mirabel
Reg. No. 31,211
(908) 444 9503

Claim Listing:

The following claims replace all pending claims in this matter.

1-142 (canceled)

143. (Currently Amended) An ordered planar array comprising several different particle types with different ligands attached to different particle types, said particles up to 10 microns in diameter, wherein different particle types are randomly distributed throughout the array, and said particles are encoded with a characteristic that permits identification of the ligand or ligands attached thereto and permits distinguishing the individual particles including distinguishing different particles from each other, and wherein said particles' positions ~~are in a planar defined area on the surface of a substrate and~~ are affixed to said substrate such that said particles form planar hexagonal crystalline configurations.

144. (Previously Presented) The array of claim 143 wherein the particles are affixed to the surface of the substrate.

145. (Previously Presented) The array of claim 143 wherein the ligands are proteins.

146. (Previously Presented) The array of claim 143 wherein the ligands are nucleic acids.

147. (Previously Presented) The array of proteins according to claim 145, wherein different proteins bind to different cell types.

148. (Previously Presented) The array of proteins according to claim 145, wherein the proteins are monoclonal antibodies.

149. (Previously Presented) The array according to claim 146 wherein the nucleic acids are oligonucleotides of DNA or RNA.

150. (Previously Presented) The array according to claim 143, wherein the substrate is a semiconductor.

151. (Previously Presented) The array according to claim 150 wherein the substrate is an electrode.

152. (Previously Presented) The array according to claim 143, wherein the characteristic is a chemical tag.

153. (Previously Presented) The array according to claim 144, wherein the particles are affixed to the substrate by chemical bonding.

154. (Previously Presented) The array according to claim 143, wherein the particles are exposed to liquid containing or suspected of containing an analyte.
155. (Previously Presented) The array according to claim 154, wherein the ligands are nucleic acids capable of hybridizing with one or more analytes contained within the liquid.
156. (Previously Presented) An article of manufacture composition comprising one or more of any of the arrays defined in claim 143.
157. (Previously Presented) The article of manufacture of claim 156 wherein the location of each array on said substrate in combination with the characteristic indicates the types of ligands therein.
158. (Previously Presented) The array according to claim 152, wherein the chemical tag is a oligonucleotide.
159. (Previously Presented) The array according to claim 152, wherein the chemical tag comprises more than one oligonucleotide.
160. (Previously Presented) The array of claim 143 wherein the planar hexagonal configurations are bubble rafts of densely packed beads.
161. (Previously Presented) The array of claim 143 wherein the size of the particles is one to two microns.
162. (Previously Presented) The array of claim 143 wherein the distances between the particles are the same.